

ANNEALING BOX.

Patented July 22, 1913.

2 SHEETS—SHEET 1.

Fig. 1. II



INVENTOR

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ANNEALING-BOX.

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To all whom it may concern:

Be it known that I, FREDERICK E. MESTA, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented
5 a new and useful Improvement in Annealing-Boxes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—
10 Figure 1 is a side elevation of one form of annealing box embodying my invention partly broken away; Fig. 2 is a section on the line II—II of Fig. 1; Fig. 3 is a side view showing a modification; and Fig. 4
15 is a cross section showing another modification.

My invention has relation to annealing boxes, and is designed to provide an annealing box which will be cheaper in construction and more durable in service than the
20 annealing boxes heretofore employed.

Prior to my invention, annealing boxes have been constructed either as integral castings or have been built up of metal plates
25 or sections united in various ways. Owing to the severe heat to which the boxes are subjected in use, they rapidly burn out and also tend to warp and crack. Numerous expedients have been resorted to in the construction of such boxes for overcoming these
30 defects and increasing their durability.

In accordance with my invention, I construct the box wholly of a heat-resisting material of initially plastic character capable
35 of being molded into the desired form and suitably reinforced by metal, if desired.

In the embodiment of my invention which I have shown in the accompanying drawings, the box consists of the body 2 of plastic material molded to the proper thickness and shape over a metallic reinforcement 3.
40 In this particular form of my invention, the metallic reinforcement 3 consists of sheets of expanded metal suitably connected at the corners with a stiffening and reinforcing
45 rod 4, near its lower edge, the plastic material being molded on both sides of the reinforce through the interstices or openings thereof.

50 Preferably all angles of the box are rounded, so as to obviate sharp corners likely to be injured, and increasing the stiffness and durability. The plastic body may be molded continuously and without seams.

55 Fig. 3 shows a modified form of the invention in which the box is provided with

a plurality of exterior reinforcing ribs 5. These ribs preferably extend both vertically and longitudinally of the box, but may be arranged in various ways.

60 Fig. 4 shows a modification in which the exterior of the box is provided with a corrugated or ribbed surface 6, the purpose of which is to increase the area of the heat-absorbing surface of the body. In this
65 figure, I have shown the lower edge of the box as resting in a metallic frame 7 of channel form, and which carries the eyes 8 for the lifting hooks. This channel seats in the usual box bottom 9.

70 In molding the box, pressure may or may not be employed in forcing the material into the molds. By the use of hydraulic pressure, a very dense structure may be obtained. Instead of molding the box as one continuous
75 piece, it will be obvious that it may be molded in slabs or sections and cemented together at the joints.

I do not limit myself to the particular forms of boxes which I have herein shown
80 and described, nor do I limit myself to the use of the metal reinforcement shown and described, since such metal reinforcement may be of any desired or suitable character. If metal reinforcement is not employed, the
85 entire box can be formed without joints from the plastic material in a suitable mold.

Annealing boxes can be constructed in accordance with my invention at a cost greatly
90 below that of the ordinary metal boxes and of greatly increased durability, the boxes being much lighter and easier to handle than are the metal boxes commonly employed.

The plastic heat-resisting material which
95 I employ may be of varying compositions. A suitable composition for the purpose is as follows: silica 71.7 parts (by bulk); alumina 11 parts; oxid magnesia 11.6 parts; alkalis (sodium and potassium) 2.2 parts;
100 silicon carbid 3.5 parts. These ingredients are thoroughly mixed into a plastic mass of suitable consistency for molding.

As the plastic material may have an oxidizing action upon the metal of the rein-
105 force, the latter is preferably galvanized or provided with some other suitable protective coating.

I claim:

1. As a new article of manufacture, an
110 annealing box composed of a molded body of heat-resisting cementitious material con-

taining a metal reinforce, substantially as described.

2. An annealing box comprising a metal reinforce and a covering or coating of cementitious heat-resisting material in which the reinforce is embedded, substantially as described.

3. An annealing box comprising a metallic reinforce and a body molded upon and embedding the reinforce and composed of an initially plastic heat-resisting material, substantially as described.

4. An annealing box comprising a metallic reinforce and a body molded upon and embedding the reinforce and composed of an initially plastic heat-resisting material whose main ingredient is silica, substantially as described.

5. An annealing box having continuous top, side and end walls of a molded fire-resisting cementitious material and containing a metal reinforce, substantially as described.

6. An annealing box having continuous

top, side and end walls of a molded fire-resisting cementitious material and containing a metallic reinforce, said box having its corners or angles rounded, substantially as described.

7. An annealing box having continuous top, side and end walls of a molded fire-resisting cementitious material and containing a metal reinforce, the lower portion of the box having embedded in its walls a metallic reinforce of substantial cross section, substantially as described.

8. An annealing box comprising a molded body of heat-resisting material containing a metal reinforce, the latter having a coating to protect it from the action of said material, substantially as described.

In testimony whereof, I have hereunto set my hand.

FRED. E. MESTA.

Witnesses:

L. IVERSEN,
J. R. BERG.